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 Show: ☐ 1: G02361. small GTP binding...[gi:7438413]

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LOCUS G02361 201 aa linear PRI 02-FEB-2001

DEFINITION small GTP binding protein Rab9 - human.

ACCESSION G02361

VERSION G02361 GI:7438413

DBSOURCE pir: locus G02361;

summary: #length 201 #molecular-weight 22837 #checksum 2544

;

superfamily: ras transforming protein; translation elongation
factor Tu homology

;

PIR dates: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change
02-Feb-2001

KEYWORDS GTP binding; nucleotide binding; P-loop.

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 201)

AUTHORS Ioannou, Y.A. and Davies, J.P.

TITLE Direct Submission

JOURNAL Submitted (~DEC-1995) to the EMBL Data Library

FEATURES Location/Qualifiers

source

1..201

/organism="Homo sapiens"

/db_xref="taxon:9606"

Protein

1..201

/product="small GTP binding protein Rab9"

Region

8..127

/region_name="domain"

/note="translation elongation factor Tu homology #label
ETU"Region

14..21

/region_name="region"

/note="nucleotide-binding motif A (P-loop)"

Region

124..127

/region_name="region"

/note="GTP-binding NKXD motif"

Region

154..156

/region_name="region"

/note="GTP-binding SAK/L motif"

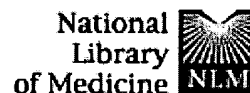
ORIGIN

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61 wdtagqerfr slrtpfyrgs dcclltfsvd dsqsfqnlsn wkkefiyyad vkpesfpfv
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181 hliqtdtnvl hrkpkpsssc c
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//

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☐ 1: EMBO J. 1993 Feb;12(2):677-82.

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Rab9 functions in transport between late endosomes and the trans Golgi network.

Lombardi D, Soldati T, Riederer MA, Goda Y, Zerial M, Pfeffer SR.

Department of Cell Biology, European Molecular Biology Laboratory, Heidelberg, Germany.

Rab proteins represent a large family of ras-like GTPases that regulate distinct vesicular transport events at the level of membrane targeting and/or fusion. We report here the primary sequence, subcellular localization and functional activity of a new member of the rab protein family, rab9. The majority of rab9 appears to be located on the surface of late endosomes. Rab9, purified from Escherichia coli strains expressing this protein, could be prenylated in vitro in the presence of cytosolic proteins and geranylgeranyl diphosphate. In vitro-prenylated rab9 protein, but not C-terminally truncated rab9, stimulated the transport of mannose 6-phosphate receptors from late endosomes to the trans Golgi network in a cell-free system that reconstitutes this transport step. Rab7, a related rab protein that is also localized to late endosomes, was inactive in the in vitro transport assay, despite its efficient prenylation and capacity to bind and hydrolyze GTP. These results strongly suggest that rab9 functions in the transport of mannose 6-phosphate receptors between late endosomes and the trans Golgi network. Moreover, our results confirm the observation that a given organelle may bear multiple rab proteins with different biological functions.

PMID: 8440258 [PubMed - indexed for MEDLINE]

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